Computers : for counting in millions

Computers still breed instant millionaires —like Mr James K. Sweeney, the president of Computer Machinery Corporation, which is based in Los Angeles, but is in fact spreading across the United States and Europe on the strength of a system that eases probably the worst bottleneck in the field of computers, the input of information to the computer itself. In July, 1969, CMC supplied its first customer. By the end of that year sales had reached $2,440,489, with a backlog of orders valued at $6,800,000. Since CMC will go public in July this year, Mr Sweeney is now prevented by the American Securities and Exchange Commission rules from making a sales forecast for 1970, but last autumn he was quoted as expecting sales this year to range between $25 million and $40 million. What the company makes is a piece of key punch equipment for feeding data into computers. Instead of being hooked to individual tape recorders, as many as 32 key punch machines are linked to a small, time-sharing computer. This can only be used by data centres with a large number of punch operators, but there are plenty of these. In the United States alone, the potential market for such systems is estimated at $720 million. In Britain it is about one-tenth of that.

With two friends and an investment banker, who raised $750,000 in return for 30 per cent of the stock, CMC was in business. But between the formation of the company and the raising of the $750,000, the company was operating on the $70,000 which the partners had raised themselves, on, in Mr Sweeney's case at least, the houses they lived in. And here the differences between operating in Europe and in the United States become significant. A typical CMC system now costs $130,000, but first a prototype had to be built. Every necessary component was already in production by some company or other. But CMC had to buy these components without having sold a single system, with only $70,000 on tap. The larger firms simply told the partners to take the components they needed for the prototype on a sale or return basis. Their prime concern was the promise of follow-on orders if the product was successful.

It then became important to find a customer willing and able to take a risk on a new product without crippling his whole operation if something should go wrong. Many of CMC's early customers happened to be blue-chip companies, which has helped sales too. They include American Express, Union Carbide, Blue Cross in both Chicago and Los Angeles, Continental Airlines and Universal Studios. In Britain CMC has sold systems to Computer Data Services and Vehicle and General

Sweeney : easy as handball

Insurance. The moral of the story is that the United States has made it easy for bright ideas from young men to attract money. For Mr Sweeney the key problem is for his company to grow as fast as possible while his product still gives him an edge. It is this rate of growth which is so hard to buy in Europe.

RESEC NEWS LETTER

"WE ARE BUILDING AN IBM CARD STRETCHER"!

The new key-to-disk system, which was installed in San
Francisco March 8 and in operation March 9 of 1970, has
proven to be a successful adventure. The system is
doing all that it was intended to do and the reliability
of the system thus far has been extremely good. The
applications that are on the key-to-disk system are:
Security master update, name and address changes,
dividends, net settlements, production journals, checks
paid and bookkeeping entries. Several earlier operational
problems have been completely resolved and operator
orientation to the new system has been completed.

Now, to the IBM card stretcher! Believe it or not, the
time has come when we are no longer restricted to an
80-character IBM card. Final phasing-in of the remaining
equipment, which is slated for the near future will take
advantage of program changes that will allow the equipment
to handle a long length record. For instance, instead
of an operator keypunching several 80-character IBM
cards and sometimes as many as 8 cards for one trade
ticker, under the new system the operator will be able
to key-in the entire trade ticket on one input record.
One of our programmers is currently testing the trade
program to allow the new key-to-disk system to give
it a 239-character record. This will provide significant
advantages to operations in terms of faster and improved
hardware equipment, reducing the number of records required
for a trade ticket, and more efficient handling of input
to the computer. The 239-character record will allow the
operator to eliminate most of the duplicate and redundant
information which otherwise would have to be keypunched
in subsequent cards. Though San Francisco has only 60%
converted to the new key-processing system, the operators
already have the capability of getting the information
through the main processing computer more efficiently
and accurately than has been done in the past. The
improved method of input has increased operational
efficiency in the computer room as well as in the
keypunch section.

"WE ARE BUILDING AN IBM CARD STRETCHER"! (CON'T)

The key-processing system can have up to 32 individual key stations, each operating independently and simultaneously. No IBM cards are used. As data is entered to the keyboard, it is processed and stored on a magnetic disk unit. After verification is completed, jobs can be transferred automatically in any desired sequence from the disk on to a single reel magnetic tape. This reel then becomes input to the main computer.

What does all this mean? It means that you, as Users, have available to you an improved input system that, in turn, provides you better control and accuracy of input to the computer, --and a faster method of handling it.

The first phase of installation of the key stations in Los Angeles will begin on May 1, 1970.

KEY-TO-DISC SYSTEMS: WITH PRODUCTION STARTING, MARKETEERS ARE IN FULL CRY

This fall keyboard-to-disc data entry is being marketed aggressively by a number of new firms. The multiterminal, small-computer-controlled systems are the evolutionary step in a data processing business that is still trying to optimize input.

This is the first season for the systems. Many of the companies in the market are not much more than a year old and only a few have systems in operation. The initial entrants — Realtronics, Computer Machinery Corp., Logic Corp. — announced their products last fall. Since then Penta Computer Associates, Inc., Inforex, Consolidated Computer Services of Canada, and Systems Engineering Laboratories have joined the group. Another aspirant is Data Synetics Corp., Burlington, Mass.

Essentially the keyboard-to-disc data entry system is a number of keyboard terminals, a supervisory terminal, a small computer, a magnetic disc and a tape drive. The terminals number from 8 to 64 although the most quoted figures are 16 and 32. They are either modified IBM 029 keypunches or specially built keyboards that duplicate 029 operations. The computers control the system operation and record formatting. The discs are fixed head or packs and one company will use a small drum. Tape can be either 7 or 9 track.

The manufacturers are assembling their systems. Computer Machinery, which seems to be leading the pack in the market, is assembling its Key-Processing system around a PDP-8L. It is building the input terminal on a Honeywell Microswitch keyboard and will use Memorex disc drives and Peripheral Equipment Corp. tape drives.

Realtronics' Real 1 is Digitronics' Invac keyboards linked to a PDP-8i, with either a Digital Equipment Corp. or Data Disc, Inc., drum and Kennedy Co. tape drives.

Penta Computer is using a Redcor 70 computer, Burroughs disc drives, a modified IBM 029 terminal and Peri-

demonstration will be at the Fall Joint Computer Conference. According to Cybernetics, there are a number of firm orders for the keyboard-to-disc system, all requiring customizing. The first installation will be in December, at General Motors' New York offices.

—JOHN WESSLER

pheral Equipment tape unit in its Key-Logic system. Logic Corp.'s KeyDisc system is controlled by a Varian 620-1 computer and Systems Engineering's Keytran is using the company's own 810B.

Inforex is using a read-only memory for its system control, the Intelligent Key Entry. Key Entry will support only eight terminals.

not for the small shop

The initial claim of all the people selling keyboard-to-disc data entry is "moneysaving." However, they add that the system must replace at least 12 keypunches. Tape handling and other operator overhead is eliminated and faster recording of data results from the computer control of recording and verification and the disc's faster transfer rates.

The computer stores format and other repetitious job information — Computer Machinery's system stores up to 1000 programs, Inforex over 100, Realtronics 192, and SEL claims unlimited storage for formats. It also handles verification — usually a one-pass key-in and visual check with mechanical notification — and immediate correction. Backspacing is also built into some systems. SEL's Keytran permits it on character, record or field.

Variable record length is a competitive claim, but the extent of the variety is limited. Logic Corp indicates no limits, but CMC says 256 characters per record is its top length. SEL sets its limit at 399 characters, and Realtronics features 192 characters. Another point contested is the number of data fields available. The usual number is 32, although SEL claims they are the only ones to offer 32 true data fields. With other systems, they say, the fields must be identified; with their own the fields can be used without identification and split.

For most of the companies, plans for marketing and support still have to be implemented. Some, like CMC, are doing these themselves and are going to build field engineering forces. Others are farming maintenance and picking up sales representatives until they can afford — and have the equipment population to warrant — a national sales and service organization. Another variation is that of Penta Computers, which is splitting support with Redcor. The computer manufacturer will maintain the equipment and Penta will support the programming.

Thus far, the race has gone to the company that has gotten its product

California, the Pacific Coast Stock Exchange, Universal City Studios, Intellectron, the American Express Co., Data World Corp. and a major bank, reportedly First National City Bank of New York. The company expects to ship some 20 systems by the end of the year and to install 200 in 1970.

Jim Sweeney, CMC president, reports orders for the systems are in excess of $7 million. The Key Processing systems range from $100,000 to $300,000. A 32-terminal system rents for around $37K a month. The company is currently completing its domestic sales network — offices in San Francisco, Chicago, New York, and Washington — and has opened offices in London. A Paris office will be established in January. Initially, systems will be shipped overseas but production is scheduled to begin in Britain in May; 1970. The rapid move into Europe is due to Sweeney's wanting to be there first and capitalize on the uniqueness of the product. He also figures his market is increased by 50%.

The CMC philosophy on keyboard-to-disc data entry is to furnish a system that replaces the keypunch operation. It is a general system for broad use and not tailored to the customer. Customizing not only brings problems to the manufacturer but also to the user, says Sweeney. Since the user operates in a dynamic environment, he explains, the system must be continually updated to meet his changing needs. If it is initially customized the user is locked into a system that becomes outdated and the manufacturer can't afford to continually reprogram. He feels the basic system is the best approach and permits the user to make modifications if he cares to.

The market for keyboard to disc, according to Sweeney, is one-half of the 600,000 keypunches and 300,000 verifiers — which give IBM 10% of its revenues. He also figures that the keypunch population has increased since the advent of the keyboard-to-tape system. Which might indicate that the various keyboard data entry systems do not compete but are sufficiently different to each find its own market.

This is the theory at Penta Computers. The company's marketing approach is that keyboard to disc is generally different from keyboard to tape and that there is no competition between the two. The first Penta Key-Logic, which costs around $100,000 for an eight-terminal system will be installed in December. The company began to take orders in mid-September.

having the orders. Other companies — Penta, Logic Corp., Systems Engineering, Consolidated Computer, Realtronics and Inforex — are either just starting to take orders or have only one or two systems in operation.

sel has own cpu

Systems Engineering has just announced Keytran. A sales point they are making is that the control processor — the 810B — is a good-sized computer and can be used for data processing when not handling the data entry operation. Logic Corp. has only one installation, at the University of Pennsylvania. Consolidated Computer is being discounted as a strong factor in the U.S. market. The possible threat to CMC is Realtronics, but the company's situation still raises questions on its ability to get going.

Realtronics came onto the scene with good form in the spring. It was then a subsidiary of Struthers Wells Corp. and had been a software firm for six years. Expectations for the company and its system were high. The approach was considered good. It seemed to know the demands of the large keypunch operation and had met them. It was also offering custom software and separate maintenance contracts. However, Realtronics has stood still for the last eight months.

The problems that caused this were not the company's own. Struthers Wells ran into difficulties and was more concerned with pulling its own irons out of the fire than pumping cash into a subsidiary. This situation ended in September when SW sold its 70% interest in Realtronics to Cybernetics International, a New York based software and consulting company.

Cybernetics bought the systems group for around $2 million, about $700,000 cash for the 70% owned by Struthers Wells, another $600,000 or so in cash owed SW by Realtronics and the rest in stock exchange with Realtronics employees.

Realtronics is being operated as a division of Cybernetics. Ridley Rhind is the Cybernetics man looking after the operation. As for the systems' company's own personnel — 24 strong — there has been no announcement of new titles. Al Paster, who was president, Alex Bernstein, executive vice president, C. L. McCarty, marketing vice president and John Connolly, who was headed software development, are still actively involved with the Real I.

As yet there is no system in operation. At the end of September the supervisory software for the system